空気の力で建設する最も理想的な建築物

シェル構造は外力に最も強い合理的建築物の理想のパターンです。なだれでもシェルは1本の柱も用いず、自然なスペースを空気の中で建設する鉄筋コンクリートの構造物。堅牢さを誇り、しかも独創的なデザインが楽しめるのも、このビニシェルの魅力です。

特 長
- 外力に対し、最も強い構造物です。内部空間を100%フル活用できます。工期が非常に短縮化できます。\n- 価格面でも安くて、ユニークなデザインが自由に楽しめます。

用途
- 一般住宅、セカンドハウス
- レジャー施設（レストラン、室内プール、スケート場などに最適）
- 学校、体育館、幼稚園、集会場
- 事務所、工場
- 機械室、一般倉庫、冷凍倉庫、サイロ
- 漁礁、海中構造物。
無限の可能性を求めて

膜面構造による新しい文明創りを目指し、EXPO'70に協力させて頂きました。テントの特性を生かした豊かな色彩、ユニークな造形美、機能性が話題になったことは、ご記憶に新しいことと存じます。更にこの度、理想的な建築物へのアプローチを続けてまいりました私共が、イタリアよりビニシェル技術を導入し、ソフトシェルからハードシェルに至る広大な建築物に着手いたしました。
世界最大の膜面構造物メーカー太陽工業は、今後とも無限の可能性を求め、前進いたします。
何卒、よろしくご援助の程をお願い申し上げます。

太陽工業株式会社
社長 能村 龍 太郎
セカンドハウスとしてもお推めします。
長い留守居のあとも、ビニシェルは鍵をかけられた時
そのままの状態でお迎えします。
火災・風雨にも安心です。
EXPO'70での実績が裏付けます
機能的で無駄のない空間処理が オフィスの機能を
一層円滑にしました
レジャー施設をご利用になるお客様は様々で
流動性も予想通りにはゆきません
しかし ビニシェルの内部空間が
その問題を解決します
レストラン・スケート場・室内プール
ダンスホールなどに最適です
An exciting new concept in construction designed to facilitate the rapid erection of buildings has been introduced in New South Wales, as part of the State’s School building programme.

The novel technique basically involves the inflation of wet concrete into dome-shaped buildings known as Binishells, so named after the man who invented the concept, Dr. Dante Bini, an Italian Architect.

The Department of Public Works has completed a program of ten Binishells in schools in the Sydney Metropolitan area. Four of the shells are 18 metres in diameter, while the remainder are 36 metres in diameter, the larger domes providing a total space four times greater than the smaller shells.

Narrabeen North Public School was chosen as the site for the first of the 18-metre domes. A three-dome complex was built at the school. Two inter-connecting domes are used as a library and a third Binishell serves as an administration office for the school.

The library has a thick carpet covering a large part of the floor area extending up the walls to window sill level. Other parts of the floor are covered in deep brown quarry tiles and white floor tiles. Group activity, office, audio-visual workroom and recreation areas are provided along with toilets and a mezzanine floor. The library is furnished with circular moulded furniture imported from Italy, in bright colours of blue, green, white and yellow, in contrast with the simple off-white colour of the interior walls.

Following the Narrabeen North project, a fourth 18 metre dome was erected at Killarney Heights Public School for use as a library.

The next stage was to construct the 36 metre domes on a more ambitious scale, the first shell being inflated at Peakhurst High School in November 1974, providing the school with a multi-purpose centre. Inside accommodation includes a full-size basketball court, a stage, kitchen and change rooms, volleyball courts, handball courts and practice basketball areas, the dome being large enough to be used for a variety of indoor sports, drama and recreational activities. Other similar projects have been erected at Pittwater High School, Randwick Girls’ High School, Fairvale High School, Ingleburn High School and Kuringai High School.

This revolutionary construction method has been used overseas to build houses, restaurants, nightclubs, swimming centres and sport centres. After a study of overseas application of the technique, the Department decided on a program of Binishells for educational buildings. Dr. Bini came to Australia to act as Consultant to the Department for the program.

The construction of the domes is simple and quick. The dome structures are formed by slightly compressed air supplied by electrically driven centrifugal fans through ducts under the concrete ring foundation. Prior to inflation, steel reinforcement and concrete is placed on the top of a neoprene membrane and then covered with a P.V.C. membrane.

For a 36 metre dome, pouring the concrete takes approximately three hours, while inflating the structure occupies another hour. Workmen can commence the finishing work in the interior within a few days.

The Government Architect of New South Wales established a team of architects, engineers and architectural assistants to build the domes with the firm of Taylor, Thomson and Whitting acting as Engineering Consultants to the Department.

On the advice of Dr. Bini, the first shells constructed were 18 metres in diameter in order to acquire familiarity with the techniques involved before constructing the larger 36 metre shells. A group of architects, together with a team of men from the day-labour staff of the Department’s Building Construction and Maintenance Branch, were trained in the technique of erecting the domes. The cost of erecting and fitting out the 18 metre shells in the initial program has been similar to that of conventional buildings, but the time of construction has been reduced. The larger 36 metre shells show a reduction in cost over more conventional buildings for the later shells, and a similar saving in time is evident.

The Departments of Education and Public Works are evaluating the possible use of the domes in future school building programs.
BINISHELLS – FAST AND ECONOMICAL

Jennings Industries Limited is the licensed constructor in Australia of the unique, pneumatically formed Binishell concrete dome system under a national agreement with Dr. Dante Bini, inventor of the system.

Uses include centres for recreation, assembly, swimming pools, gymnasiums, schools, libraries, motels, restaurants, commercial, industrial and agricultural purposes.

Binishell domes are constructed by pneumatically raising from ground level a layer of reinforced concrete which has not yet begun its initial set.

Jennings is able to build Binishells economically and quickly for a wide range of purposes in any location in Australia.

PROCESS

The process uses a nylon reinforced neoprene membrane which is anchored to a circular concrete foundation. Steel reinforcement and springs are placed across the uninflated membrane. Concrete containing set retarding chemicals is placed over.

Low air pressure is forced between the floor and the membrane, lifting all the building materials up to the required shape. A vibrator process consolidates the concrete into a homogeneous dome. The air pressure supports the structure in position until the concrete sets. Openings to any desired shape may be then made.